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ABSTRACT

This 2-year study looked at the effects of incorporating reflective journals within a workshop approach into graduate and undergraduate education courses. The workshop approach involves four key components: (1) reflective journals, (2) individual student-professor conferences, (3) structured small group discussions of project progress with peers, and (4) presentation of the final product to the class. Five classes at two universities (involving a total of 69 students) participated in the study. A questionnaire of seven items to be rated and three open-ended questions was given to students to solicit their perceptions of the effects of the workshop approach and the reflective journals on their individual learning. Student perceptions of the overall use of the workshop approach were generally positive. Findings indicated students were thinking in a self-regulated or metacognitive way and that reflective journaling and the workshop approach fostered those skills. Several students described their higher level of involvement with learning as a strength of the workshop approach. Several students enthusiastically described the motivational aspects of the approach as an important strength. The Workshop Approach Evaluation Form is appended. (Contains 16 references.)

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Using Reflective Journals and the Workshop Approach in University Classes to Develop Students' Self-Regulated Learning

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Using Reflective Journals and the Workshop Approach in University Classes to Develop Students' Self-Regulated Learning

Introduction

Many graduate and senior level classes have, as a culminating activity, some type of project or research paper in which students are expected to synthesize, articulate, and apply significant learning from the course. Usually a student is able to choose from a variety of topics, but the final "project" is generally some sort of report or term paper, often hurriedly constructed during the final days of the quarter or semester. As professors, we hope that the knowledge gained through this project or paper assignment will be meaningful to the student, and/or will reflect his or her careful, measured thought. Sometimes it is neither.

Papers and written reports have as a major advantage the fact that they are relatively easy to evaluate. In addition, they provide a permanent written record of the student's work. A major disadvantage of papers, however, is that they are somewhat limited in what can be expressed through them. Because they are written, they are linear. Papers are constructed from ideas written one after the other and, therefore, provide little opportunity for holistic impressions or multi-sensory expression (Marzano, Pickering, Arredondo, Blackburn, Brandt, & Moffett, 1992). Additionally, not all students are good at writing, and this fact presents the possibility (perhaps even the probability) that student learning will be misjudged because writing skills do not match knowledge levels.

What we know about teaching and learning indicates that students learn best when instruction requires them to use knowledge in meaningful ways (cf. Bereiter & Scardamalia, 1985; Resnick, 1987; Scardamelia & Bereiter, 1991; Leinhardt, 1992). Instructional tasks that involve students in complex thinking processes such as problem solving, decision making, investigation, experimental inquiry or invention provide effective ways of engaging students in the meaningful use of knowledge, and thereby promote learning (Bransford, Vye, Kinzer,& Risko, 1990; Marzano, 1992; Roth, 1990). We also know that allowing students some choice and control over their own learning activities will result in higher levels of task engagement and in higher quality

products from the learning experience (Borkowski, Carr, Rellinger, & Pressley, 1990; Scardamalia, Bereiter, McLean, Swallow, & Woodruff, 1989). The direct implication is that classes should be designed so that at least some of the instruction is more student directed than teacher directed (Marzano, 1992; Perkins, 1992). The workshop approach, described in this paper, is one way to structure university student project work assignments so that this type of instruction is provided. Reflective journals are a critical component of the workshop approach. In recent years, the use of reflective journals has generated considerable interest among university faculty. Such interest serves as impetus for this paper, which reports the effects of the use of reflective journals and of the workshop approach on students' self-regulated learning.

The Workshop Approach

The workshop approach is well-documented within what might be called the "whole language movement" or the "writing process approach" to teaching language. Atwell (1987), Hansen (1987), and Graves (1990) have described its use in reading and writing classes across a variety of grade levels. Descriptions of its use in other content areas has been scanty, however (Marzano, 1992); and a recent literature search revealed that use of the workshop approach with college or university classes has not been reported. The workshop approach is particularly well suited for use in classes requiring complex individual or group projects because it provides a structure that keeps students on track and allows them to function in self-directed ways. In other words, the workshop approach causes students to engage in self-regulated (or metacognitive) thinking during work on their class projects (Atwell, 1987). It is this obligatory engagement in self-regulated thinking that causes the workshop approach to be so different from the more usual "term project." From the initial assignment students are required to think rigorously about their own learning; they are held accountable for decisions about the project's final shape and for the specific criteria used to evaluate their work.

As used in the classes studied for this research effort, the workshop approach involves four key components: reflective journals, individual student-professor conferences, structured small group discussions of project progress with peers, and presentation of the final product to the class.

Each of these components has specific purposes. The reflective journal is used to help students stay on track with their project work, to clarify their thinking about project goals, to describe their plans, to record progress and problems, to reflect on successes and failures along the way, to develop criteria or standards their projects must meet, for reference during the sharing sessions with peers, and as a content focus for conferences with their professor. Conferences with teams or individual students are scheduled during the term for the purpose of examining the students' self-regulated thinking about the project, helping them make decisions about the project, helping them solve problems, and as a way of monitoring their involvement. During the conferences students share journal entries with their professor, report progress on their projects, discuss difficulties and problems they've encountered, and describe plans for future work. A major purpose of the structured discussions with peers is to help students maintain motivation to carry out their project plans. Being accountable to each other, for either individual or group project work, seems to provide enough incentive to cause students to complete planned actions in a timely fashion. An important additional effect, however, is the amount of learning that occurs from listening to how other students have solved problems or found necessary resources. Class presentations provide opportunities for peer evaluations of student work; for more extensive exposure to content from the diversity of projects selected by other students; and for students to gain poise and confidence in oral presentations.

Purposes

This paper describes a two year research effort undertaken by two professors, at different universities, to examine the effects of incorporating into their graduate and undergraduate education courses the use of reflective journals within the workshop approach which was being used to involve students in complex projects requiring the meaningful use of knowledge. While we were interested in a broad range of effects of the use of the workshop approach and reflective journals as an instructional strategies, this paper reports on the research questions aimed specifically at identifying effects on the self-regulated aspects of student learning. For example: 1) How does the use of reflective journals affect students' self-regulated learning? 2) How does the use of the

workshop approach affect students' self-regulated learning? 3) How does the use of reflective journals affect students' overall project work? 4) How does the use of the workshop approach affect students' overall project work?

Study and Methods

Student project work assignments were typically introduced with broad language within the syllabi of the classes participating in this research effort. For example, student requirements include: "a project that demonstrates understanding of a significant unit of the course content," "a project that requires synthesis of the course content and application of skills learned to develop a useful product for the student's work situation," or "a project that demonstrates student skill in use of the computer tools learned in this class." This broad language is then made meaningful with numerous examples of products produced by former students, such as writing and performing a song, a dance, or a puppet show; creating or demonstrating some physical product or model, such as board games, models, sculpture, or paintings; producing a videotape or slide show; developing a set of curricular or instructional plans and activities; designing and presenting a workshop for other teachers; or writing a short story, essay, or report.

From class explanations about the project expectations, students learn that they will keep reflective journals about their project development; that they will develop, in consultation with their professor, the standards of excellence by which the project should be judged; that they will report project progress and plans to their peers in structured small group discussions during class; and that conferences will be scheduled with their professor to discuss progress with the projects at various instances though out the term. Approximately fifteen percent of class time was devoted to conferences and small groups discussions. While the professor conferenced, the remaining students met with their peers in structured small group sharing sessions. Individual conferences were also scheduled as needed outside of class time.

The acceptance of a wide variety of formats for student projects, while apparently a motivational factor that stimulates a deeper level of student involvement with the course content, results in projects that are more difficult to evaluate. The assessment of alternative format projects

such as videotapes, plays, and board games is somewhat easier when students are required to develop a project summary, either oral or written, to be submitted along with the project. Students are also asked to develop a time line, to list important steps that need to be taken, and identify needed resources as part of the project plan contained in their reflective journals.

This research effort was conducted by two college of education professors at different comprehensive land grant universities. Five classes, three graduate educational administration classes and two upper level educational technology classes, with a total of 69 students, participated in the study. More specifically, the educational administration classes included: Instructional Supervision with 13 graduate students, Curriculum for School Administrators with 9 graduate students, and Interpersonal Communications and Conflict Resolution with 15 graduate students. The two educational technology classes, The Microcomputer as an Educational Medium, 1992 and 1993, each included a total of sixteen students respectively -- the 1992 class having 2 juniors, 9 seniors, and 5 graduate students, and the 1993 class having 3 juniors, 4 seniors, and 9 graduate students. In each of these classes the student project work, for which the workshop approach was used, constituted either 25 percent or 33 percent of the total class grade. Among the products produced by the students were: videotapes, songs, puppet shows, case studies, board games, poetry, children's stories, slide shows, photo essays, a marketing strategy for an imaginary credit card company, curriculum plans for incorporating computers into specific classroom settings, curriculum implementation plans, a curriculum management plan, survey research projects, teacher workshops on conflict resolution, a student mediation project, and, of course, regular research papers.

A questionnaire consisting of 7-items to be rated with a 4-point Likert-type scale, and 3 open-ended items (see Figure 1) was given to the students at the end of the courses to obtain student perceptions of the effects of the workshop approach on their learning. The open-ended items asked students to describe their perceptions of the strengths and weaknesses of the workshop approach as a teaching strategy, to describe the effects on their learning, and to make "other" comments. Additionally, the instructors photocopied sample student journal responses about the

project and made their own reflective journal entries. While questionnaire data were collected only for the Spring, 1992 and Spring, 1993 classes, both professors have used the workshop approach with some of their other classes since 1990.

Results and Understandings

Student perceptions of the overall use of the workshop approach relative to learning were generally positive. The mean response rating on the four-point scale was 3.37, with a standard deviation of .62 (N = 68). As expected, several distinctions were found between subgroups of students. For example, graduate students rated the use of the workshop approach more favorably than did undergraduates, with means of 3.48 and 3.06 respectively. The analysis of variance indicated a significant difference in means, $F(1, 66) = 6.034$, $p<.0167$. Education students rated the use of the workshop approach significantly more favorably than did non-education majors with means of 3.50 and 2.86 respectively, $F(1, 66) = 14.294$, $p<.0003$. The mean response ratings for Spring 1992 and 1993 students also differed significantly. The 1992 students had a mean of 3.23, while the 1993 students had a mean of 3.55, $F(1, 66) = 4.693$, $p<.0339$. The professors believe that workshop guidelines and explanations of expectations were clearer for the 1993 students than for 1992 students.

Because two professors were involved in this study, significant differences between ratings for the overall use of the workshop approach between their classes had been anticipated (Figure 1, Item A). This was not the case, however. While there were significant differences between the professors on the mean ratings for components of the workshop approach, i.e. on peer discussions and on project presentations, no significant differences were found between them on ratings for the overall use of the workshop approach. Table 1 presents a summary of the mean ratings on all seven items from the student questionnaire.

TABLE 1
Summary of Mean Student Responses on Four-point Scaled Questionnaire Items

Item	Mean	Standard Deviation
Workshop Approach	3.37	.62
Reflective Journal	2.51	.88
Instructor Conference	3.41	.67
Student Discussion	3.12	.90
Evaluation Criteria	3.10	.83
Project Formats	3.71	.55
Class Presentation	2.94	.85

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Significant differences between mean ratings for the components of the workshop approach were also found among subgroups of the students involved in the study. For example, graduate students rated the class presentations of projects as having made a greater contribution to the successful completion of their projects than did undergraduates, with means of 3.12 and 2.37 respectively. The analysis of variance indicated a significant difference in means, $F(1, 63) = 10.881$, $p < .0016$. Education students rated the acceptance of a variety of project formats as having made a significantly greater contribution to their success (mean = 3.78) than did non-education majors (mean = 3.42), $F(1, 67) = 4.96$, $p < .0293$. Similarly, the Spring 1993 students rated the contribution made by the variety of project formats significantly higher than did the Spring 1992 students, with means of 3.90 and 3.56 respectively, $F(1, 67) = 7.008$, $p < .0101$. And, as mentioned above, a significant difference was found between ratings of the students of the two professors on the contribution made to project success by the discussion of projects with other students. For example, mean ratings on this item were 3.38 for one professor and 2.86 for the other, $F(1, 67) = 6.335$, $p < .0142$. A significant difference was also found between the professors on the student ratings of the contribution made by the class presentations of projects. The mean ratings on this item were 3.30 and 2.56 respectively, $F(1, 63) = 15.234$, $p < .0002$. Table 2 presents a summary of these differences between mean student subgroup ratings of effects of the workshop approach on learning.

TABLE 2
Summary of Significant Differences Between Mean Student Subgroup Ratings of Effects of the Workshop Approach on Learning

Subgroups	Means	F-Test	p
Item A:			
Graduates/Undergraduates	3.48/3.06	6.034	.0167
Education/Non-education	3.50/2.86	14.294	.0003
Spring1992/Spring1993	3.23/3.55	4.693	.0339
Item B.3:			
Professor A/Professor B	3.38/2.86	6.335	.0142
Item B.5:			
Education/Non-education	3.78/3.42	4.960	.0293
Spring1992/Spring1993	3.56/3.90	7.008	.0101
Item B.6:			
Graduates/Undergraduates	3.12/2.37	10.881	.0016
Professor A/Professor B	3.30/2.56	15.234	.0002

Students were asked to make open-ended comments about the strengths and weaknesses of the workshop approach as a teaching strategy, the specific effects of the workshop approach on

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learning, and other nonspecific comments. These responses, along with sample journal entries (all data for this study were collected anonymously), were analyzed using a constant comparative method to develop emergent themes and categories (Lincoln & Guba, 1985; Miles & Huberman, 1984). These themes and categories were developed separately by each of the investigators. Data sets were then compared for similarities and the categories collapsed to eliminate redundancy. As a result of this analysis, comments about the strengths of the workshop approach were grouped into categories: self-regulated learning, higher level involvement in learning, and motivation are reported in this paper. Comments about the weaknesses of the workshop approach were also grouped into categories: self-regulation or metacognition and motivation are reported here (Figure 1, Item C). Comments about the effects of the workshop approach on students' learning (Figure 1, Item D) were also categorized as both negative and positive and resulted in one additional category being added -- application or meaningful use of the learning. Each of the categories are discussed separately. Comments that are different from the categories, solicited under "other" (Figure 1, Item E) are added to this discussion.

Self-regulation.

Self-regulation (or metacognition) has been described by Marzano et al. (1992), as a mental habit that includes the tendency to think about one's own thinking, to plan, to be aware of necessary resources, to be sensitive to feedback, and to evaluate the effectiveness of one's actions. Obviously, developing student self-regulation is an important goal of education, and one that most university professors hope to foster in their classrooms. As these five classes were engaged in project work, the professors accumulated considerable observational evidence that students were thinking in a self-regulated manner. Students wrote that the workshop approach as a teaching strategy forced them to "take charge" of their own learning, to become more self-directed, and to function as self-regulated learners. They reported that the reflective journal kept them on track, caused them to think about their progress toward project goals, and to continually evaluate and assess progress and plans for project completion. For example, one student commented, "This approach forces the student to become the worker and allows the professor to facillitate learning

rather than spoon feeding. I found myself continually rethinking my project ideas, questioning my own viewpoints, and modifying to fit the new."

Students described increased skill at self-regulation, at thinking about their own thinking, as one of the effects of the workshop approach on learning. They wrote about being better at structuring their own learning, about being better at planning, and at setting and meeting deadlines. One student said the reflective journal had a positive impact on his/her learning, and that s/he would use it in future learning situations. Another observed, "The reflective journal was helpful, but I didn't always like writing out my thoughts. Laziness on my part!"

Students' self-regulation was also addressed as a weakness of the workshop approach as a teaching strategy. While more than seventy-five percent of the total student comments were positive, and more of the students wrote descriptions of strengths rather than descriptions of weaknesses, there were some students who definitely did not like the approach as a teaching strategy. Some students thought the workshop approach was better suited for "highly self-directed" and/or that it was difficult to accept responsibility for the total project design and the timeline, and therefore to stay on task. One student, however, in describing weaknesses of the approach, admitted that s/he could have used the conferences and journals more effectively if s/he had simply planned better.

Higher level involvement in learning.

Several students described their higher level of involvement with learning as a strength of the workshop approach. They talked about the depth of their learning and the much broader coverage of content because of the shared discussions with other students, and because they found themselves interested in an idea and pursued it after the class requirement ended. (However, one student thought this was a weakness of the approach because "I learned more than was necessary to pass the course"!) Students described the higher level thinking that was required to develop a project over which they had so much control. One wrote, "This method of working on a project makes me dig deeper and really think about the material, rather than just getting by". They found this type of learning to be challenging and rewarding, and predicted that retention would be much

greater. Some said that the one-to-one discussions with the professor were "very effective" and caused them to "really think" about how the content applied to life; one student said that it was during such a conference that s/he saw, for the first time, "the big picture of how computers might be changing our culture." Two graduate, higher and adult education majors commented that this type of learning was "most appropriate for adults," that it was how classes "should be designed for adult learners," and that it caused the skills to be internalized and applied to life.

Students also described their experiences with "deeper learning" as an effect of the workshop approach. They said they found themselves thinking in more detail about the content, integrating their learning across courses and life experiences, concentrating on specifics, "in constant contact with the new knowledge being learned," and using the new knowledge in meaningful ways. They also valued the synthesis that the reflective journals seemed to cause. Some students attributed this "deeper learning" effect to one project requirement that students apply their new skills or use the knowledge in a meaningful way. They said that the use of the content in their work situations caused them to think about other real life applications, that they learned-by-doing, and that they "developed skills for life." One student said, "I really learned these skills [*spreadsheet, database, etc.*] and would feel comfortable teaching them to anyone."

While a clear majority of students appreciated the deeper involvement with learning and considered it to be one of the strengths of the workshop approach, some students (for example, the one mentioned earlier) described the higher level of involvement with learning as a weakness. These students appeared to prefer a more passive style of learning. One student stated that s/he didn't like this approach; that it was all new, and s/he liked to listen to lectures and then "just do papers for projects"; two stated that they were uncomfortable with presentations and that writing [*a term paper*] was easier. Another preferred "direct instruction" followed by multiple choice tests. One student said that s/he preferred being "exposed to the wisdom of the ages from the professor, rather than trying to figure things out for myself." Still others felt the workshop approach was too much work for a "regular class."

Motivation.

Several students enthusiastically described the motivational aspects of the workshop approach as an important strength. They wrote about high intensity interest levels, the enjoyment of being "buried" in a task, "the fun we had" collaborating with colleagues, the personal fulfillment they found in their projects, the "sheer joy" of creating something worthwhile, and about the "comfortable way they learned new content" for their projects. One student spoke for many when s/he wrote:

> The joy of initially coming up with an idea, convincing a peer that it would be exciting to try, working on it and watching it go through a total metamorphosis as it developed, and then having something in the end that you are so totally proud of is hard to describe. "It was fun", sounds weak, but it was! Thanks for making us do it!

The terms "joy " and "fun" were also used to describe an important positive effect of the workshop approach on learning. Students wrote about "enjoying talking individually with their professor," about the positive experience of gaining "new learning" in such a pleasant way, and about the "motivational aspect of being able to do a project in some format other than the usual ...writing a paper". One student observed that the workshop approach, "takes some of the pressure off the professor to be a drill master; instead s/he can function as a true facillitator of learning; and that it had reinforced his/her belief that "teachers ought to teach to alternative learning styles." Another thought the project, and its presentation to the class, provided a more authentic evaluation of student work, which s/he preferred to the more artificial written test.

Although motivational to many students, the workshop approach had the opposite effect on some. Two students described this as a weakness. They said the approach required more motivation to get started and that it was easy to put off work on the project to the last minute. One undergraduate student wrote, "I was totally in the dark as to what was expected of me for this project. It wasn't until after the second conference with the professor that I finally had enough motivation to get started. I just kept putting things off. It would have been much easier for me to have book assignments, the computer lab practice, and tests."

General comments.

Students were invited to make nonspecific open-ended comments (Item E, Figure 1). These general comments were overwhelmingly positive. Many reiterated how much they had learned and how much fun the class had been. Students wrote comments such as those below:

> I have acquired a new attitude about education by taking this class.
> I am taking something of value with me as I leave.
> I would like to see more university classes use this approach. I felt comfortable here. I would definitely sign up for more such classes.
> Adult learners need the flexibility to design and to meet different goals. This was wonderful for my self-confidence.
> Professors are the oldest educators, and therefore, usually use the oldest teaching methods. This was different. The approach gives rise to student stress -- but allows greater learning in the end.

Concluding Remarks

This investigation provided information about student and professor perceptions of the success of use of reflective journals and of the workshop approach as a teaching strategies for managing project work in university classrooms. As a result of the study, the professors conclude that the workshop approach offers considerable potential for developing student self-regulation. This approach also seems to encourage a higher level of involvement in, commitment to, and reflection on the quality of student work -- not only on the mechanics of the project itself, but on a final realization about the broader learning that must occur.

FIGURE 1
Student Questionnaire

Workshop Approach Evaluation Form
Spring, 1993 -- Data Collection

Objective: To evaluate the effectiveness of the workshop (or project) approach in university and college classes.

Instructions: Please rate the following items from low to high by circling 1, 2, 3, or 4. Thank you for your assistance in evaluation of this instructional format. Please note you are asked to make open-ended responses; use the back of this form if additional space is needed. Your thoughtful comments are valued and will be very helpful to us as we complete this research project.

Evaluator: Please indicate your class and major (eg. senior- elementary education, masters- educational administration, etc.)_____

Low			High	
1	2	3	4	(A) Please rate the use of the workshop/ project approach to your learning.
				(B) Please rate the relative contribution of each of the following to the successful completion of your project:
1	2	3	4	(B.1) the reflective journal
1	2	3	4	(B.2) conferences with your instructor
1	2	3	4	(B.3) discussion with other students
1	2	3	4	(B.4) development of your own project evaluation criteria
1	2	3	4	(B.5) the acceptance of a variety of project formats by your instructor
1	2	3	4	(B.6) presentation of your project to the class

(C) Please comment on the strengths and weaknesses of the workshop (or project) approach as a teaching strategy.

(D) Please comment as to the effect of the project approach on your learning.

(E) Other comments.

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